Quadrum DigiPlus / Quadrum DigiPlus Green

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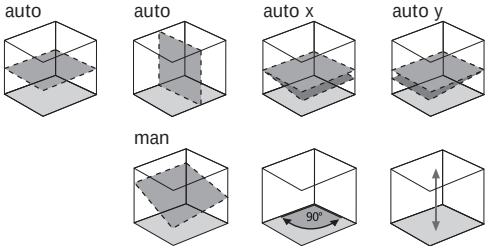
sensor AUTOMATIC

ADS Tilt

IP 66

lock

Laser 530-670 nm



Laserliner®
Innovation in Tools

Quadrum DigiPlus / Quadrum DigiPlus Green

! Please read the operating instructions as well as the enclosed brochures „Guarantee and additional notices“ and „Laser class 3R safety instructions“. Follow the instructions they contain. Safely keep these documents for future reference.

Two-axis grade laser with red or green laser technology.

– With additional red plumb laser
– Laser modes: spot, scan, rotary and hand receiver mode
– The laser modes can be set using the remote control.
– optional SensoLite 310: Laser receiver range up to 300 m radius
– optional SensoLite 410: Laser receiver range up to 400 m radius
– optional SensoMaster 400 (Quadrum DigiPlus red only): Laser receiver range in excess of 300 m radius. With longer laser receiver unit and millimetre exact distance reading for laser level.

General safety instructions

Laser radiation!
Avoid direct exposure
to the eyes.
Laser class 3R
< 5 mW · 530 - 670 nm
EN60825-1:2007-10

Caution: Prior to using the laser, you must read the safety instructions for laser class 3R thoroughly. Warning signs must not be removed from the laser measuring device! Do not look directly into the beam. Lasers must be kept out of reach of children. Never intentionally aim the device at people. This is a quality laser measuring device and is 100% factory adjusted within the stated tolerance. For reasons of product liability, we must also draw your attention to the following: Regularly check the calibration before use, after transport and after extended periods of storage. We also wish to point out that absolute calibration is only possible in a specialist workshop. Calibration by yourself is only approximate and the accuracy of the calibration will depend on the care with which you proceed.

Special product features and functions

sensor AUTOMATIC — The rotary laser aligns itself automatically. It is set to the required initial position (to within an operating angle of ± 6°) and the automatic system then performs the necessary fine adjustment, with three electronic measurement sensors detecting the X, Y and Z axes.

lock — Transport LOCK: The device is protected by a special motor brake during transport.

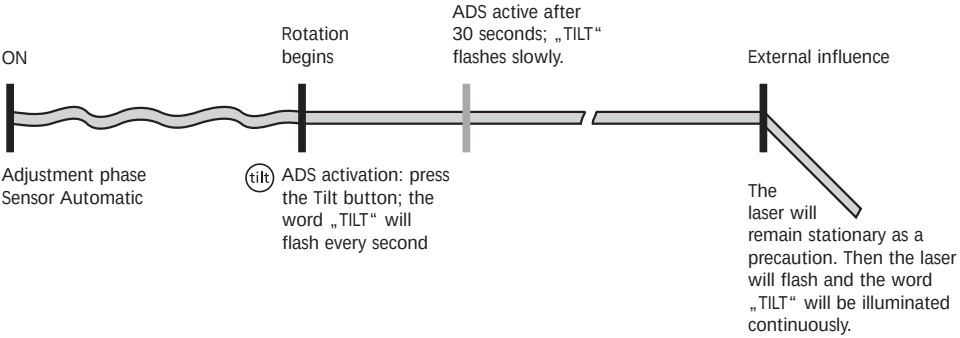
IP 66 — The device characterised by specific protection against dustand rain.

ADS Tilt The anti-drift system (ADS) prevents erroneous or inaccurate measurements. How it works: continuous monitoring of the alignment of the laser is activated 30 seconds after the ADS is switched on. If the device moves due to external factors or if the laser loses its height reference, the laser will come to a standstill and blink. In addition, TILT will be illuminated continuously, a warning triangle will appear on the LC display and the system will beep. To continue working, press the tilt button again or switch the device off then on again. Erroneous and inaccurate measurements are thus prevented simply and reliably.

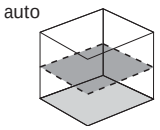
(tilt) The ADS is not active following switch-on. Once the device has been set up, press the tilt button to activate the ADS, enabling you to protect the laser from changes in position caused by the device being disturbed by external factors. The word „TILT“ will flash on the display to indicate that the ADS function is active; see the diagram below.

! The ADS does not activate the monitoring function until 30 seconds after the laser levelling procedure has been completed (set-up phase). The word „TILT“ will flash every second during the set-up phase and then flash more slowly when the ADS is active.

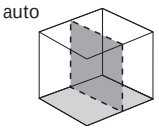
ADS function



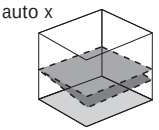
Space grids: These show the laser planes and functions.
auto: Automatic alignment / man: Manual alignment



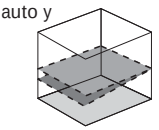
Horizontal levelling



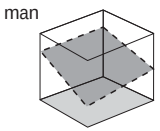
Vertical levelling



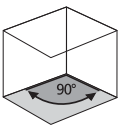
X axis slope



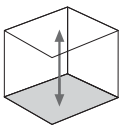
Y axis slope



Slope function



90° angle


Plumb function

Quadrum DigiPlus Green: green laser technology

The distance at which a laser is visible to the naked eye depends on its colour i.e. wavelength. This is because of the human eye's physiology – green appears brighter to us than red. Depending on ambient light, green lasers are therefore many times more visible than red lasers; in indoor areas this is as much as 12 times brighter. This permits applications on dark surfaces, over longer distances and work in very bright ambient light. A red laser with a 635 nm wavelength is used as a reference value for brightness differentiation.

In contrast to red lasers, green laser light can only be produced indirectly. This is a source of potential characteristic fluctuations:

– The optimal operating temperature is 20°C. Outside of its operating temperature range of 0 – 40°C, the green rotary laser will be darker. IMPORTANT: Allow the unit enough time to adapt to the ambient temperature before switching the unit on.

– Laser brightness may vary somewhat from one unit to another. This is a natural phenomena and excluded from warranty claims.

– Green Laser will only work with certain Receivers. The maximum range of the Receiver is shorter, please refer to technical details.

Battery charging

– Charge the device's battery completely prior to use.

– Connect the charger to mains power supply and the charging socket (J) of the battery compartment (L). Please only use the charger supplied; using a different charger will invalidate the warranty. The rechargeable battery can also be charged when it is not inserted in the device.

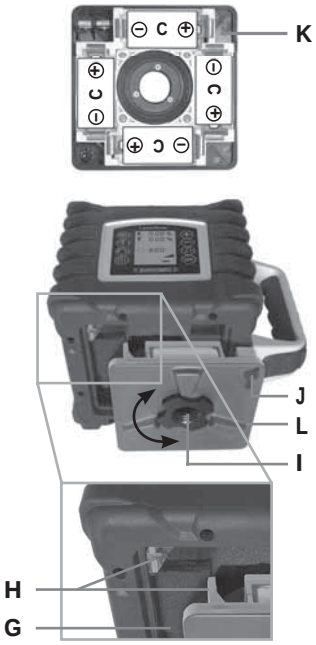
– When the rechargeable battery is being charged, the LED on the charger (N) lights up red. When the LED changes to green, charging is complete. When the unit is not connected to the charger the power charger's LED lamp will blink.

– Alkaline batteries (4 x type C) can be used as an alternative. Insert them in the battery compartment (K) as per the installation symbols.

– Insert battery (L) / battery compartment (K) into slot (G) and secure it in place with fastening screw (I). The electrical contacts (H) must be connected.

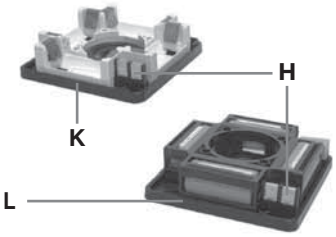
– With the rechargeable battery inserted, the device is ready to run even during charging.

– If the battery symbol (14) flashes continuously on the LC display, the batteries must be replaced or the rechargeable battery must be charged.

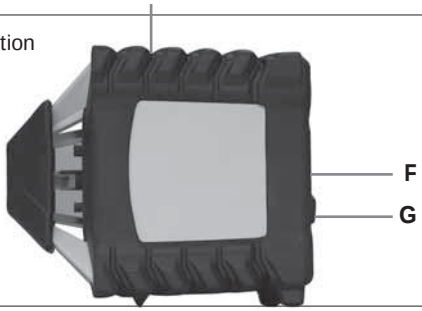


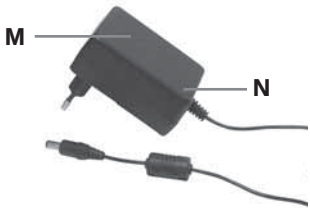
Insert batteries into the remote control

– Observing the correct polarity.



Vertical operation





A Reference / plumb laser outlet

B Prism head / laser beam outlet

C Receiver diodes for remote control (4 x)

D Control panel

E LC display

F 5/8“ thread /
Reference, plumb laser outlet

G Slot for rechargeable battery / battery compartment

H Electrical contacts

I Battery compartment /
battery fastening nut

J Charging socket

K Battery compartment

L Rechargeable battery compartment

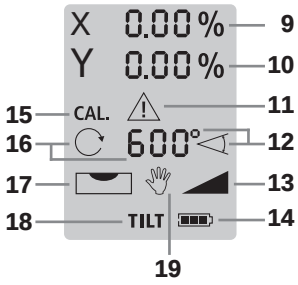
M Mains unit / charger

N Operation indicator
red: battery is charging
green: charging process complete

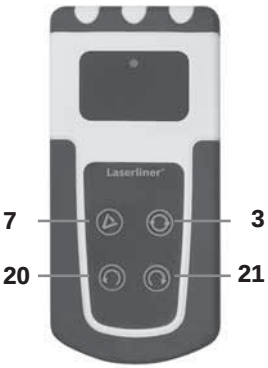
Quadrum DigiPlus / Quadrum DigiPlus Green

Control panel Quadrum DigiPlus

LC display Quadrum DigiPlus



Remote control



1 auto/slope function

2 Switching the x and y-axes

3 Rotary speed for selection 600 / 300 / 120 / 60 / 0 rpm

4 ON/OFF button

5 Plus button for setting the inclination with the digital and manual slope function

6 Minus button for setting the inclination with the digital and manual slope function

7 Scan mode

8 Tilt function

9 Display of inclination setting of the x-axis

10 Display of inclination setting of the y-axis

11 Tilt function warning indicator

12 Scan mode indicator

13 Dual grade function indicator

14 Battery charge status indicator

15 Calibrating mode indicator

16 Speed indicator

17 Levelling indicator

18 Tilt function indicator

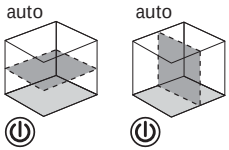
19 Manual mode indicator

20 Positioning button (rotate to the left)

21 Positioning button (rotate to the right)

Horizontal levelling and vertical levelling

– Horizontal: Position the device on a level surface or on a tripod.
– Vertical: Set the unit on its side feet. The operator panel should be at the top. With the optional wall bracket (product ref. 080.70), the device can be mounted on a tripod for vertical usage.
– Press the „ON/OFF“ switch



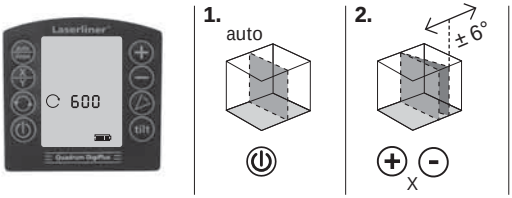
! The rotary laser aligns itself automatically once it is turned on.

– The device levels itself automatically to within a range of ± 6°. During the set-up phase, the laser flashes and the prism head remains stationary. When levelling is complete, the laser lights up continuously and rotates at maximum speed. Refer also to the sections about „Sensor Automatic“ and „ADS Tilt“.

! If the device has been placed on a surface with too much of a slope (more than 6°), the prism head will remain stationary and the laser will flash and emit a warning sound. The device must then be placed on a more even surface.

Positioning the vertical laser level

In vertical mode the laser level can be positioned exactly. „Sensor Automatic“ remains active and levels to the vertical laser level. Refer to the illustration below.

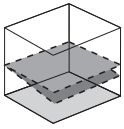


! When the maximum slope range of 6° has been reached, the laser will stay fixed and blink and emit a sound. In this case, reduce the slope angle.

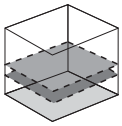
Digital inclination function (dual grade function)

The horizontal plane can be inclined digitally in the x and y-axes. The maximum inclination of a plane is up to ±10%. In the sum of both axes, the maximum value is reduced per each axis. On the large LC display, the values are displayed and can be entered independently.

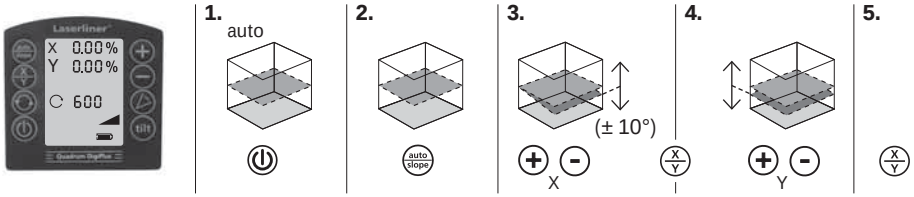
Setting the axes: Press the auto/slope button (1). The x-axis indicator blinks on the LC display. The numbers can be set with the Plus and Minus buttons (5/6). Switch to the y-axis by pressing the X/Y button (2). Then the y value can be set with the Plus and Minus buttons (5/6). Pressing the X/Y button (2) again confirms the entry. The device then adjusts to the desired value. Refer to the illustrations below.



On 1 plane



On 2 planes



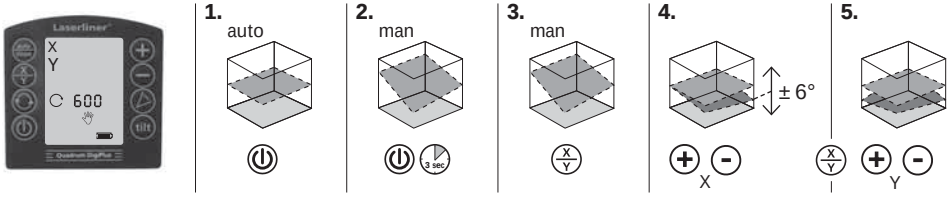
Important: It is not possible to enter any information while the device is levelling. The LC display shows the blinking levelling symbol (17). When the levelling symbol stops blinking, levelling is complete and new numbers can be entered.

! The automatic sensor is activated whenever the digital slope function is in use.

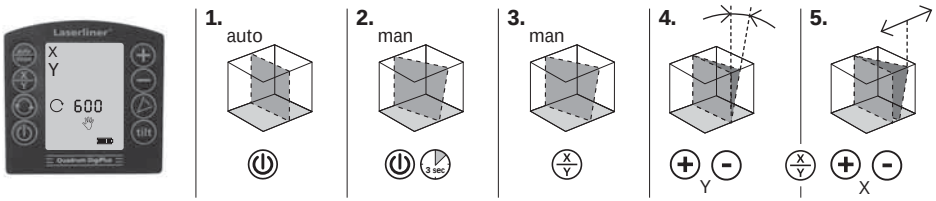
! The X/Y axes are marked on the device.

Manual slope function up to 6° – horizontal

Activation of the slope function deactivates the automatic sensor, To return the laser to manual mode, keep the ON/OFF button pressed until the hand symbol (19) appears on the LC display. Press the X/Y button to set the horizontal plane. The plus/minus buttons are used to re-adjust the slope by means of a motor. In the process the X-and Y-axis can be adjust separately. Refer to the illustrations below.



Manual slope function up to 6° – vertical

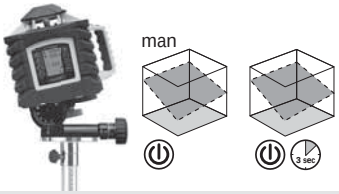


! When the maximum slope range of 6° has been reached, the laser will stay fixed and blink and emit a sound. In this case, reduce the slope angle.

Manual slope function > 6°

Steeper slopes can be set using the angle plate, which is available as an optional extra (product ref. 080.75).

TIP: Allow the device to align itself automatically and set the angle plate to the zero position. Then switch off the automatic sensor. See: Manual slope function up to 6°. Finally, incline the device to the angle you require.



! When the hand symbol appears on the LC display, the automatic sensor is not activated and therefore horizontal and vertical levelling is not possible.

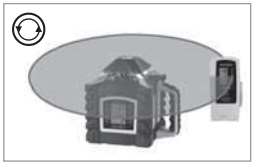
Laser modes

Rotary mode
The following speeds can be set using the rotary button:
0, 60, 120, 300, 600 rpm

Spot mode
You access spot mode by pressing the rotary button repeatedly until the laser stops rotating. The laser can then be positioned exactly at the measuring point by means of the direction buttons.

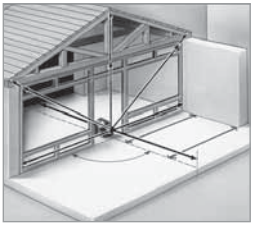
Scan mode
The scan button can be used to activate and set a lightintensive segment in 4 different widths. You position the segment via the direction buttons.

Hand receiver mode
Working with the laser receiver (available as an optional extra): Set the rotary laser to maximum speed and switch on the laser receiver. Refer to the operating instructions for the respective laser receiver about this.



Working with the reference/plumb laser

The unit has two reference lasers. In horizontal operation these lasers can be used to drop a perpendicular. In vertical operation these reference lasers are used to align the unit. This is done by adjusting the reference lasers parallel to the wall. This aligns the vertical laser plane at a right angle to the wall, see illustration.



Technical data (Subject to technical alterations)	
Self-levelling range	± 6°
Accurancy	± 0,75 mm / 10 m
Horizontal / vertical levelling	Automatic with electronic sensors and servo motors
Self-levelling alignment time	Approx. 30 seconds over the entire operating angle
Vertical reference beams	90° to rotation plane
Rotation speed	0, 60, 120, 300, 600 RPM
Remote control	Infrared IR
Laser wavelengths green / red	635 nm / 532 nm
Laser class red / green	3R (EN60825-1:2007-10)
Laser output rating red / green	< 5 mW
Power supply	High-performance rechargeable battery /batteries (4 x type C)
Rechargeable battery life red / green	approx. 35 h / approx. 14 h
Non-rechargeable battery life red / green	approx. 50 h / approx. 8 h
Battery recharging time	ca. 6 h
Operating temperature red / green	-10°C ... + 50°C / 0°C ... + 40°C
Storage temperature	-10°C ... + 70°C
Protection class	IP 66
Dimensions (W x H x D) / Weight (incl. batteries)	215 x 205 x 165 mm / 2,6 kg
Remote control	
Power supply	2 x type AAA
Remote control range	max. 40 m (IR-Control)
Dimensions (W x H x D) / Weight (incl. batteries)	63 x 130 x 24 mm / 0,15 kg

EU directives and disposal

This device complies with all necessary standards for the free movement of goods within the EU.

This product is an electric device and must be collected separately for disposal according to the European Directive on waste electrical and electronic equipment.

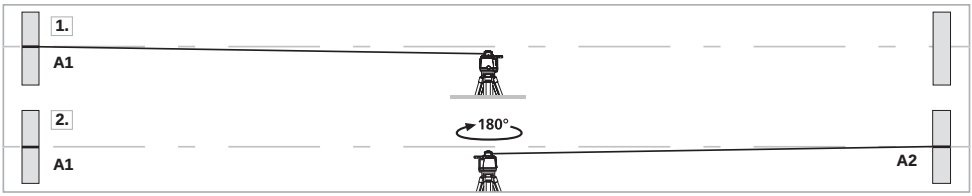
Further safety and supplementary notices at: **www.laserliner.com/info**

Preparing the calibration check

It is possible for you to check the calibration of the laser. To do this, position the device **midway** between 2 walls, which must be at least 5 metres apart. Switch the device on. The best calibration results are achieved if the device is mounted on a tripod. **IMPORTANT:** The automatic sensor must be active.

1. Mark point A1 on the wall.

2. Turn the device through 180° and mark point A2. You now have a horizontal reference between points A1 and A2.



Performing the calibration check

3. Position the device as near as possible to the wall at the height of point A1. Now adjust the device in the X axis.

4. Turn the device through 180° and mark point A3. The difference between points A2 and A3 is the tolerance for the X axis.

5. To check the Y and Z axis, repeat steps 3 and 4.

! If points A2 and A3 are more than 0,75 mm / 10 m apart on either the X or Y axis, the device is in need of adjustment. Contact your authorised dealer or else the UMAREX-LASERLINER Service Department.

Adjustment mode

1. Take the alignment of the rotary laser into account when performing adjustment work. Always adjust all the axes.

2. Switch the device to adjustment mode:

Switch off the rotary laser and switch it on again while holding the auto/slope button. Press and hold the auto/slope button until the x-axis indicator starts to flash on the display. Then you can release the auto/slope button.

The x-axis indicator flashes first in horizontal mode (X/Y axis). You can switch between x and y-axis using the X/Y button on the rotary laser.

Only the Y-axis indicator is shown in vertical mode (z-axis).

3. Correcting the adjustment:

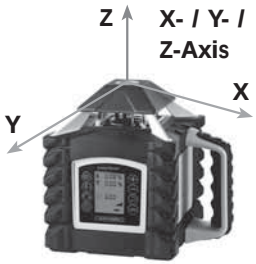
Using the Plus/Minus buttons on the rotary laser, you can move the laser away from its current position to the level of reference point A2. The laser only changes its position by pressing the buttons several times.

4. Completing the adjustment:

Cancel: Switch the rotary laser off (via the ON/OFF button) to reject all adjustment settings and restore the previous status.

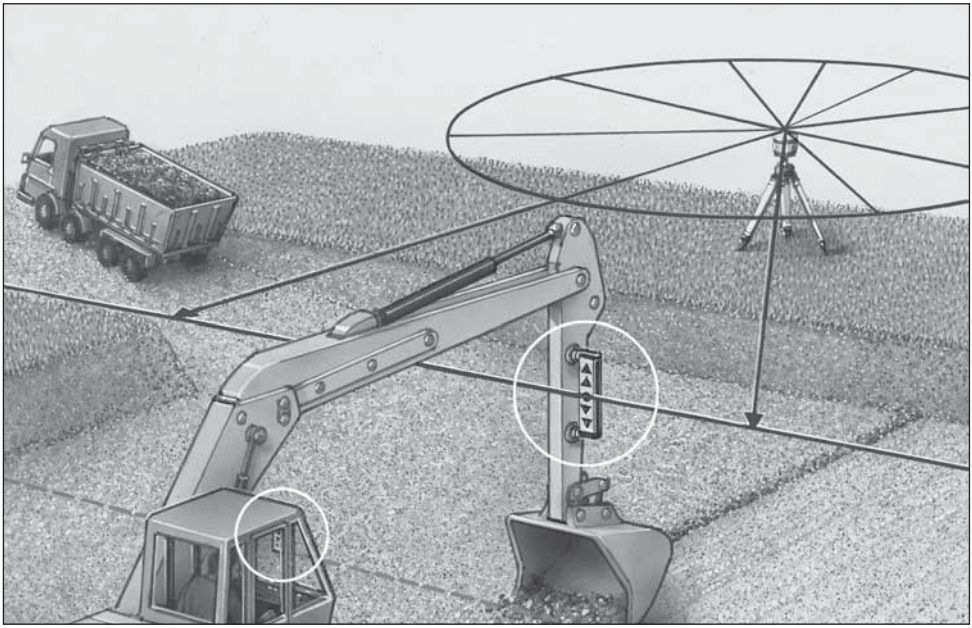
Save: Pressing the auto/slope button saves the new adjustment settings.

Positioning: The laser can be rotated by pressing the positioning buttons on the remote control.



! Regularly check the adjustment before use, after transport and after extended periods of storage. Always make sure to control all axes.

Quadrum DigiPlus / Quadrum DigiPlus Green



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